

from under trees of *F. microcarpa* and *F. drupacea* (both strangler figs). This was also noticed for the fig seeds which formed a major fraction of the copious droppings of Great Pied Hornbills (*Buceros bicornis*) below their nest-holes.

I also split open some ripe figs of *F. exasperata* (free-living *Ficus*) and *F. drupacea* and placed them at my camp site. The same evening I saw ants carrying away the seeds from all the figs, although the seeds of *F. exasperata* seemed to be less popular. However, both species of figs were devoid of seeds by the next morning.

It has been said elsewhere that the lipid-containing exocarp is not affected by the passage through the vertebrate gut and is still harvested by the ants (Kaufmann *et al.* 1991). Ants are known to

be responsible for *Ficus* seedlings taking root in crevices in vertical surfaces (Kaufmann *et al.* 1991).

This system of secondary dispersal of fig seeds by ants has not been studied in any Indian forest. Although this note is of a qualitative nature, a detailed study of this aspect may throw some light on the importance of the role played by invertebrates in affecting the seed shadow of figs, especially strangler figs, which require specific microhabitats for successful germination (Putz and Holbrook 1986).

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24. THE SPOT PUFFIN BUTTERFLY *APPIAS LALAGE LALAGE* DOUBLEDAY (PIERIDAE) - A RARE RECORD FOR SOUTH INDIA

The butterfly *Appias lalage lalage* has been recorded in the United Provinces, Mussooree to Burma, Tavoy (Talbot 1939). Its range is also mentioned from Simla to Burma and Assam by Wynter-Blyth (1957). D'Abrera (1982) states its range as Assam to upper Burma and Antram (1924) noted it as a rare species recorded from the Himalayas, Sikkim, Bhutan and Assam. The only record found from South India was at the Netterikkal region of the Kalakkad forest, Tirunelveli District, Tamil Nadu (Satyamurti 1966).

A single male specimen of the wet season form with a wingspan of 76mm was taken in Gudampara Estate, Santhanpara panchayat, Idukki District, Kerala

at an elevation of 1200 m above msl on December, 3, 1995. The butterfly was mudpuddling at noon near a small stream flowing through a coffee plantation.

It appears to be one of the few records of the Spot Puffin from South India and may be the first record from Kerala. This shows that this butterfly though rare, does exist in the Western Ghats apart from its known range. The specimen is now in the Gudampara Biopark Project collection.

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25. NEW RECORDS OF PLANTS FOR INDIA

During the course of studies on Flora of Sikkim, six interesting collections were recorded, which were compared with the type specimens housed in CAL, BM & K herbaria, and identified. They turned out to be new records for the Flora of India. Brief taxonomic accounts are provided to facilitate their identification in the field.

1. *Berberis tsarica* Ahrendt in J. Bot. Lond. lxxix, suppl. 48.1941. (Berberidaceae). Deciduous shrubs, upto 1m tall. Stems angular, densely spiny, spines mostly 5-fid, internodes *ca* 7 mm. Leaves oblanceolate, 7-15 x 2.5 - 4.5 mm, obtuse mucronate at apices, margins entire or with a few spinose teeth. Flowers solitary; pedicels 3-10 mm long. Sepals elliptic, 4-5 x 3 mm. Petals obovate, *ca* 4 x 2.5 mm, apices emarginate. Stamens 2.5 - 3 mm long. Berries broadly ellipsoid, 8-10 x 5-7 mm, red.

Fl. & Fr.: Aug.-Sept.

Specimens examined: Sikkim, s.l., Cave 530 (E?): Momay-Samdong, 15000 ft, Cave 40/47 (E!).

2. *Carex montis-everestii* Kuekenth. in Kew Bull. 1934:261.1934.

(Cyperaceae). Perennial rhizomatous herbs. Culms upto 15 cm high, subterete. Leaf-sheaths reddish-brown at base, persistent. Leaves basal, upto 7 x 0.15 cm, erect. Inflorescence consists of 2-3 spikes; terminal spike male or gynaandrous, narrowly ellipsoid, borne on suberect, 0.5 - cm long peduncles; lower spikes female, broadly cylindric, *ca* 1.2 x 0.8 cm, produced on pendant, filiform peduncles, Lowest bracts filiform, shorter than inflorescence. Utricles elliptic, *ca* 4.5 x 1 mm, glabrous, shining, reddish-chestnut above, pale beneath, minutely notched at the orifice; beakless. Stigmas 3. Female glumes

oblanceolate, up to 5.5 x 2 mm, acute, dark reddish-brown. Male glumes upto 6 x 1.2 mm.

Fl. & Fr.: July-Aug.

Specimens examined: Llhonak, 15000 ft, Smith & Cave 1879, 2155 (CAL!).

3. *Carex pseudofortida* Kuekenth. ssp. *afghanica* Kukkonen in Ann. Bot. Fennici 21:384.1984. (Cyperaceae). Perennial herbs up to 2.5 m high, rather gracile. Rhizomes stoloniferous. Culms obtusely trigonous, 1-1.8 mm in diam., smooth or occasionally scabrid above. Leaves folded or involute, rarely flat, 1.5 - 3 mm wide. Inflorescence a rather compact head, 10-15 x 7-12 mm; bracts shorter than apices; glumes 2.8 - 4.1 x 1.5 - 2 mm, scabrous. Utricles 3-4 x 1.2 - 1.8 mm, beaked, more or less inflated, obscurely nerved.

Fl. & Fr.: July-Aug.

Specimens examined: Sikkim, s.l., Raju *et al.* 8060, 8063 (BSHC!); Above Llohank, 4780 m, KEKE dt. 1989 (E!).

4. *Xanthosoma brasiliense* Engl., Pflanzenr. Arac. - Cococas. 58.1920.

(Araceae). Stemless herbs. Leaf-blades hastate, up to 48 x 15 cm, veins of basal lobes exposed for *ca* 1 cm; intramarginal veins conspicuous; petioles up to 40 cm long. Spadix with appendix. Ovary 2-4 locules, with numerous ovules; stylar discs coherent between adjacent female flowers.

Fl. & Fr.: Sept.-Oct.

Specimen examined: Gangtok, *ca* 11 km in north on Gangtok - Kabri road, *ca* 1700 m, ESIK s.n. (BSHC!. E!).

Notes: A native of tropical America; now almost naturalised in Sikkim upto 1700 m to Peshok and Mungpo areas of Darjeeling district of West